That which is claimed is:

1. A method to produce a thin-layer lignocellulosic composite having increased resistance to moisture-induced shrinking or swelling comprising:

(a) forming a lignocellulosic composite mixture comprising at least one type of lignocellulosic fiber comprising a predetermined moisture content and at least 5% by weight of an organic isocyanate resin;

(b) pre-pressing the mixture into a loose mat; and

(c) pressing the mat between two dies at an elevated temperature and pressure and for a sufficient time to further reduce the thickness of the mat to form a thin-layer composite of predetermined thickness, and to allow the isocyanate resin to interact with the lignocellulosic fiber such that the resultant thin-layer composite has a predetermined resistance to moisture.

2. The method of claim 1, wherein the lignocellulosic fiber comprises wood.

3. The method of claim 1, wherein the mixture further comprises at least one type of wax.

4. The method of claim 3, wherein the mixture comprises up to about 2% by weight of wax.

5. The method of claim 3, wherein the mixture comprises about 0.5% by weight wax.

6. The method of claim 1, further comprising adding a release agent to the thin-layer lignocellulosic composite.

7. The method of claim 6, wherein the release agent comprises an emulsion of surfactants and polymers.

8. The method of claim 6, wherein the release agent is added directly to the mixture prior to pre-pressing the mixture into a loose mat.

9. The method of claim 8, wherein the amount of release agent added to the mixture ranges from about 0.5% to about 8% by weight.

10. The method of claim 6, wherein the release agent is sprayed onto at least one surface of the loose mat.

11. The method of claim 10, wherein the amount of release agent sprayed on to the mat surface comprises from about 0.1 to about 8.0 grams solids per square foot (1.1 to 86.1 grams per square meter) of mat surface.

12. The method of claim 6, wherein the release agent comprises a pigment.

13. The method of claim 1, further comprising exposing at least one surface of at least one die to an anti-bonding agent.

14. The method of claim 13, wherein the step of exposing at least one surface of the die to an anti-bonding agent comprises coating at least one of the dies that is used to press the mat with an anti-bonding agent.

15. The method of claim 13, wherein the anti-bonding agent used to coat the die surface comprises silane or silicone.

16. The method of claim 14, wherein the step of coating at least one die surface comprises baking the anti-bonding agent onto the die surface.

17. The method of claim 1, wherein the lignocellulosic mixture comprises about 80% to about 95% by weight fiber.

18. The method of claim 1, wherein the predetermined moisture content of the lignocellulosic fiber ranges from about 7% to about 20% moisture content by weight.

19. The method of claim 1 wherein the predetermined moisture content of the lignocellulosic fiber ranges from about 10% to about 14% moisture by weight.

20. The method of claim 1, wherein the isocyanate comprises diphenylmethane diisocyanate (MDI) or toluene diisocyanate (TDI).

21. The method of claim 20, wherein the isocyanate comprises diphenylmethane-4,4'-diisocyanate.

22. The method of claim 1, wherein the mixture comprises from about 6.5% to about 15% by weight resin solids.

23. The method of claim 1, wherein the mixture comprises about 10% by weight resin solids.

24. The method of claim 1 wherein the temperature used to press the mat into a thin-layer ranges from about 250°F (121°C) to about 400°F (204°C).

25. The method of claim 1, wherein the temperature used to press the mat into a thin layer ranges from about 280°F (138°C) to about 350°F (177°C).

26. The method of claim 1, wherein the temperature used to press the mat into a thin layer ranges from about 310°F (154°C) to about 330°F (166°C).

27. The method of claim 1, wherein the pressure used to press the mat into a thin layer ranges from about 2500 psi (176 kg/cm^2) to about 150 psi (10.5 kg/cm^2).

28. The method of claim 1, wherein the pressure used to press the mat into a thin layer ranges from about 1200 psi (84.3 kg/cm^2) for 5 to 20 seconds followed by 500 psi (35.16 kg/cm^2) for 20 to 80 seconds.

29. The method of claim 1, wherein the thin-layer composite comprises up to 50% less linear expansion and thickness swelling after being immersed for 24 hours in 70°F (21°C) water than thin-layer composite comprising a non-isocyanate based resin.

30. The method of claim 1, wherein the predetermined resistance to moisture comprises a thickness swelling of less than 15% after being immersed for 24 hours in water at 70°F (21°C).

31. A method to produce a thin-layer wood composite having increased water resistance comprising:

(a) forming a mixture comprising: (i) a refined wood fiber comprising a predetermined moisture content; (ii) a wax; (iii) at least 5% by weight of an organic isocyanate resin; and (iv) a release agent;

(b) pre-pressing the mixture into a loose mat;

(c) pressing the mat between two dies at an elevated temperature and pressure and for a sufficient time to further reduce the thickness of the mat to form a thin-layer composite and to allow the isocyanate resin to interact with the wood fiber such that the resultant thin-layer composite has a predetermined resistance to moisture, and wherein at least one of the die surfaces has been coated with an anti-bonding agent.

32. A thin-layer wood composite made by the method of claim 1.

33. A thin-layer lignocellulosic composite comprising a mixture of no more than 95% by weight of at least one type of lignocellulosic fiber, wherein the fiber has a predetermined moisture content, and at least 5% by weight of an organic isocyanate resin, wherein mixture is pressed between two dies at an elevated temperature and pressure and for a sufficient time to form a thin-layer composite of predetermined thickness, and to

allow the isocyanate resin to interact with the lignocellulosic fiber such that the resultant thin-layer composite has a predetermined resistance to moisture.

34. The thin-layer lignocellulosic composite of claim 33, wherein the lignocellulosic fiber comprises wood.

35. The thin-layer lignocellulosic composite of claim 33, wherein the mixture further comprises at least one type of wax.

36. The thin-layer lignocellulosic composite of claim 35, wherein the mixture comprises up to about 2% by weight of wax.

37. The thin-layer lignocellulosic composite of claim 35, wherein the mixture comprises about 0.5% by weight wax.

38. The thin-layer lignocellulosic composite of claim 33, wherein the mixture comprises a release agent.

39. The thin-layer lignocellulosic composite of claim 33, wherein the release agent comprises an emulsion of surfactants and polymers.

40. The thin-layer lignocellulosic composite of claim 33, wherein the release agent is added to the wood mixture prior to pressing the mixture into a thin-layer composite.

41. The thin-layer lignocellulosic composite of claim 40, wherein the amount of release agent added to the composite ranges from about 0.5% to about 8% by weight.

42. The thin-layer lignocellulosic composite of claim 33, wherein mixture is preformed into a loose mat, and the release agent is sprayed onto at least one surface of the mat prior to pressing the mixture into a thin layer composite.

43. The thin-layer lignocellulosic composite of claim 42, wherein the amount of release agent sprayed on to the mat surface comprises 0.1 to 8.0 grams solids per square foot (1.1 to 86.1 grams per square meter) of the surface.

44. The thin-layer lignocellulosic composite of claim 38, wherein the release agent comprises a pigment.

45. The thin-layer lignocellulosic composite of claim 33, wherein the lignocellulosic fiber ranges from about 80% to about 95% by weight.

46. The thin-layer lignocellulosic composite of claim 33, wherein the predetermined moisture content of the fiber ranges from about 7% to about 20% moisture by weight.

47. The thin-layer lignocellulosic composite of claim 33, wherein the predetermined moisture content of the fiber ranges from about 10% to about 14% moisture by weight.

48. The thin-layer lignocellulosic composite of claim 33, wherein the isocyanate comprises diphenylmethane diisocyanate or toluene diisocyanate.

49. The thin-layer lignocellulosic composite of claim 33, wherein the isocyanate comprises diphenylmethane-4,4'-diisocyanate.

50. The thin-layer lignocellulosic composite of claim 33, wherein the mixture comprises from about 6.5% to about 15% by weight resin solids.

51. The thin-layer lignocellulosic composite of claim 33, wherein the mixture comprises about 10% by weight resin solids.

52. The thin-layer lignocellulosic composite of claim 33, wherein the predetermined resistance to moisture comprises up to a 50% reduction in linear expansion and thickness

swelling after being immersed for 24 hours in 70°F (21°C) water than a thin-layer composite comprising a resin that does not include isocyanate.

53. The thin-layer lignocellulosic composite of claim 33, wherein said predetermined resistance to moisture comprises a thickness swelling of less than 15% after being immersed for 24 hours in water at 70°F (21°C).

54. The thin-layer lignocellulosic composite of claim 33, wherein the predetermined thickness ranges from about 0.100 inches (2.54 mm) to 0.250 inches (6.35 mm).

55. The thin-layer lignocellulosic composite of claim 33, wherein the predetermined thickness ranges from about 0.110 inches (2.79 mm) to 0.130 inches (3.30 mm).

56. The thin-layer lignocellulosic composite of claim 54, further comprising a density of less than about 60 pounds per cubic foot (962 kg/m^3).

57. The thin-layer lignocellulosic composite of claim 54, further comprising a density of less than about 55 pounds per cubic foot (881.2 kg/m^3).